

# MARINE ISOPODS FROM MARION, PRINCE EDWARD, AND CROZET ISLANDS (CRUSTACEA, ISOPODA)

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(With 12 figures and 2 tables)

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## ABSTRACT

23 species of marine isopods, representing 11 families and 20 genera are recorded from depths ranging from 30 to 930 m. Four new species are described, viz. *Bathynathia porca*, *Colanthurus pingouin*, *Paranthurus possessia*, and *Ilyarachna crozetensis*. The geographic distribution of the isopod fauna of Prince Edward, Marion, and Crozet Islands is discussed and the affinities with the Antarctic, South America, Kerguelen Island, and the widespread Subantarctic Islands noted. It is concluded that the Prince Edward/Crozet isopod fauna should be regarded as part of the Kerguelen Transitional Province.

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## INTRODUCTION

The present collection of isopods was submitted to the author by P. Arnaud of Marseille. The collection was made during March–April 1976, in an area embracing the Crozet Island group, and Marion and Prince Edward Islands, with a very few stations from Kerguelen Island (Fig. 1). All the collecting was done during Cruise MD.08 of the French research vessel *Marion-Dufresne*, using Charcot dredges, king crab traps, beam trawls, Reineck corers, and shrimp trawls.

The bulk of the material, and all holotypes, have been deposited in the Paris Museum, while paratypes and some duplicate material have been deposited in the South African Museum and the United States National Museum. The Serolidae are not included in the present paper.

### *Brief history of isopod collecting in the Prince Edward/Crozet/ Kerguelen Island area*

Although Marion, Prince Edward, Kerguelen, and the Crozet Islands have been visited by biological collectors intermittently since the 1880s, few comprehensive reports on the crustacean fauna have appeared. The present report

forms yet another partial contribution to the overall isopod faunule of this group of islands. The major reports on isopods from these islands are mentioned below more or less in chronological order. Kerguelen is included because of its proximity and similarity of isopod fauna.

The earliest collecting at Kerguelen was done by the Royal Antarctic Expedition in 1840. Although four species of crustaceans were collected, no report was issued. The *Challenger* stopped at Prince Edward, Marion, the Crozets, and Kerguelen during December 1874 and January 1875, on its way to the Antarctic Continent. Beddard (1884, 1886) reported on the isopods. The transit of Venus provoked the U.S.A., Great Britain, and Germany to send expeditions to Kerguelen in 1874-1875. The German corvette *Gazelle* carried out collecting in 1875, the isopods being reported by Studer (1879, 1882, 1884, 1889). At the same time that the *Gazelle* party was on Kerguelen, the United States ship *Swatara* arrived, carrying the United States Transit of Venus Expedition. J. H. Kidder did some intertidal and terrestrial collecting. The crustaceans, including three species of isopods, were reported on by Smith (1876). The British Transit of Venus Expedition biologist was A. E. Eaton. Miers (1875a, 1875b, 1879) reported on the isopods he collected.

The British research ship *Discovery* worked in the vicinity of the Crozets, and Hodgson (1910) also mentions material from the 'Kerguelen Province'. The German vessel *Gauss* of the Deutsches Südpolar-Expedition visited Kerguelen (Vanhöffen 1914), as did the British, Australian, and New Zealand Antarctic Expedition of 1929-1931 (Hale 1946, 1952). Although R. Jeannel of the Paris Museum collected marine organisms at Marion Island from the French vessel *Bougainville* in 1939, the collection report was never published. The Norwegian Antarctic Expedition isopods from Kerguelen and Crozet were dealt with by Stephensen (1947), while Sheppard (1957) reported on material collected from 1925 to 1936 by the British *Discovery II* in the general vicinity of all three island groups. Kussakin (1967, English translation 1968) dealt with the systematics and antarctic and subantarctic isopods collected by the Soviet Antarctic Expedition of 1955-1958, summarized much of the preceding work, and produced a very useful zoogeographic assessment of the knowledge to that date. Fuller (1967) presented a preliminary report on the intertidal fauna and flora of Marion Island. From this collection, Cleret (1971) described two asellote isopods. Fuller's report was extensively revised and expanded by De Villiers (1976), as part of the South African Biological/Geological Expedition to Marion Island. The isopods listed in his report were identified by the present writer, with a species of *Jaeropsis* being dealt with in a separate publication (Kensley 1975b). Carvacho (1977) added to the knowledge of the isopod fauna of Kerguelen, dealing with material collected by the French vessel *La Japonaise*.

Material	Station no.	Locality	Co-ordinates	Depth (m)
<b>Suborder VALVIFERA</b>				
<b>Family Arcturidae</b>				
<i>Antarcturus aculeatus</i> Kussakin, 1967				
1 ♂ 1 ♀	9/CP. 64	Off Î. de la Possession	46°10'S 51°49'E	120-150
2 ♂ 2 ovig. ♀	9/CP. 65	Off Î. de la Possession	46°22'S 51°51'E	112
1 ovig. ♀	9/CP. 66	Off Î. de la Possession	46°23'S 51°52'E	90-110
3 ♂ 3 ovig. ♀ 4 ♀	9/CP. 74	Off Î. de la Possession	46°22'S 51°54'E	150-160
1 ♂ 1 ♀	9/CP. 75	Off Î. de la Possession	46°19'S 51°52'E	150-340
3 ♂ 1 ♀	68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	262-270
1 ♂ 1 ovig. ♀ 2 ♀	75/CP. 303	Off Î. de la Possession	46°19'S 51°52'E	155-257
1 ♂	77/DC. 314	Between Possession and Î. de l'Est	46°25'S 51°59'E	247-270
1 ovig. ♀	78/CP. 319	Between Possession and Î. de l'Est	46°23'S 51°58'E	142-170
<i>Antarcturus furcatus furcatus</i> (Studer, 1882)				
1 ♂	9/CL. 63	Off Î. de la Possession	46°21'S 51°51'E	126-141
4 ♂ 3 ovig. ♀	9/CP. 64	Off Î. de la Possession	46°10'S 51°49'E	120-150
11 ♂ 3 ovig. ♀	9/CP. 66	Off Î. de la Possession	46°23'S 51°52'E	90-110
2 ♂ 7 ovig. ♀ 1 ♀	9/CP. 74	Off Î. de la Possession	46°22'S 51°54'E	150-160
1 ♂ 3 ovig. ♀	9/CP. 75	Off Î. de la Possession	46°19'S 51°52'E	150-340
2 ovig. ♀	42/CP. 197	Between Possession and Î. aux Cochons	46°21'S 51°34'E	172-220
1 ♂ 1 ovig. ♀	48/CP. 209	Between Possession and Î. aux Cochons	46°05'S 50°37'E	140-200
5 ♂ 8 ovig. ♀ 4 ♀	62/CP. 257	W of Î. aux Cochons	46°05'S 50°01'E	210
1 ♂ 2 ovig. ♀ 1 ♀	68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	262-270
1 ♂ 4 ovig. ♀ 1 ♀	73/CP. 295	E of Îs. des Pingouins	46°24'S 50°37'E	263-412
6 ♂ 2 ovig. ♀ 2 ♀	75/CP. 303	Off Î. de la Possession	46°19'S 51°52'E	155-257
3 ♂ 6 ovig. ♀	78/CP. 319	Between Possession and Î. de l'Est	46°23'S 51°58'E	142-170
8 ♂ 7 ovig. ♀ 4 ♀	75/CP. 326	Off Î. de la Possession	46°21'S 51°52'E	135-145
<i>Astacilla marionis</i> Beddard, 1886				
1 ♂ 2 ovig. ♀ 2 ♀	9/CP. 64	Î. de la Possession	46°10'S 51°49'E	120-150
2 ovig. ♀ 2 ♀	9/CP. 65	Î. de la Possession	46°22'S 51°51'E	112
2 ♂ 1 ovig. ♀	9/CP. 66	Î. de la Possession	46°23'S 51°52'E	90-110
4 ovig. ♀ 1 ♀	9/CP. 74	Î. de la Possession	46°22'S 51°54'E	150-160
1 ♀	9/CP. 75	Î. de la Possession	46°19'S 51°52'E	150-340
4 ♂ 3 ovig. ♀ 1 ♀	13/CP. 85	E of Marion Is.	46°56'S 37°55'E	120
2 juv.	16/CL. 95	NE of Marion Is.	46°50'S 37°59'E	138-142
1 ♀	18/DC. 107	NE of Marion Is.	46°49'S 37°56'E	140
1 juv.	32/DC. 162	S of Marion Is.	46°59'S 37°46'E	83-100
4 ♂	33/DC. 164	Between Marion and Prince Edward Is.	46°52'S 37°51'E	45
2 ♂ 1 ♀	35/DC. 170	Between Marion and Prince Edward Is.	46°39'S 38°00'E	53
2 ovig. ♀	48/CP. 209	Between Marion and Prince Edward Is.	46°05'S 50°37'E	140-200
1 ovig. ♀	53/DC. 233	Between Possession and Î. aux Cochons	46°07'S 50°20'E	110
1 ovig. ♀	75/CP. 303	Î. de la Possession	46°19'S 51°52'E	155-257

Material	Station no.	Locality	Co-ordinates	Depth (m)	
<i>Microarcturus hirticornis</i> (Monod, 1926)					
1 ♂	1 ovig. ♀	9/CP. 64	Off Î. de la Possession	46°10'S 51°49'E	120-150
	2 juv.	26/64	Crozet Islands	46°24'S 51°59'E	180
	2 ovig. ♀	9/CP. 74	Off Î. de la Possession	46°22'S 51°54'E	150-160
	1 ovig. ♀	31/DC. 156	S of Marion Is.	46°59'S 37°46'E	185
	1 ovig. ♀	42/CP. 197	Between Possession and Î. aux Cochons	46°21'S 51°34'E	172-220
	1 ovig. ♀	48/CP. 209	Between Possession and Î. aux Cochons	46°05'S 50°37'E	140-200
1 ♂	1 ovig. ♀	50/DC. 216	Between Possession and Î. aux Cochons	45°51'S 50°37'E	150
1 ♂		59/DC. 252	W of Î. aux Cochons	45°59'S 49°59'E	210-217
1 ♂		62/CP. 257	W of Î. aux Cochons	46°05'S 50°01'E	210
	1 ovig. ♀	75/CP. 303	Off Î. de la Possession	46°19'S 51°52'E	155-257

## Family Pseudidotheidae

*Arcturides cornutus* Studer, 1882

3 ♂	2 ovig. ♀	2 ♀	9/CP. 65	Off Î. de la Possession	46°22'S 51°51'E	112
11 ♂		1 ♀	9/CP. 66	Off Î. de la Possession	46°23'S 51°52'E	90-110
33 ♂	11 ovig. ♀	16 ♀				
		22 juv.	9/CP. 74	Off Î. de la Possession	46°22'S 51°54'E	150-160
1 ♂			9/CP. 75	Off Î. de la Possession	46°19'S 51°52'E	150-340
3 ♂			13/CP. 85	E of Marion Is.	46°56'S 37°55'E	120
2 ♂	1 ovig. ♀	2 ♀				
		4 juv.	19/DC. 110	NE of Marion Is.	46°45'S 38°03'E	190
	1 ovig. ♀		23/DC. 129	SE of Marion Is.	46°57'S 38°01'E	250-460
1 ♂			25/CP. 134	N of Marion Is.	46°45'S 37°56'E	185-232
4 ♂	4 ovig. ♀	1 ♀	26/CP. 135	NE of Marion Is.	46°50'S 38°00'E	135-145
		1 juv.	27/DC. 136	N of Marion Is.	46°45'S 37°54'E	185
		1 ♀	31/DC. 156	S of Marion Is.	46°59'S 37°46'E	185
3 ♂	5 ovig. ♀	4 ♀	36/CP. 173	Off Prince Edward Is.	46°40'S 38°06'E	315-570
5 ♂	1 ovig. ♀	7 ♀				
		3 juv.	36/CP. 175	Off Prince Edward Is.	46°40'S 38°07'E	375-570
6 ♂	1 ovig. ♀	1 ♀	48/CP. 209	Between Possession and Î. aux Cochons	46°05'S 50°37'E	140-200
1 ♂	1 ovig. ♀		54/DC. 234	NE of Îs. des Apôtres	45°55'S 50°20'E	130-145
1 ♂	3 ♀	1 juv.	66/CP. 270	W of Î. aux Cochons	46°15'S 49°13'E	500-562
1 ♂			68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	262-270
	3 ovig. ♀	1 ♀	73/CP. 295	E of Îs. des Pingouins	46°24'S 50°37'E	263-412
1 ♂	1 ovig. ♀		74/DC. 296	E of Îs. des Pingouins	46°17'S 50°47'E	290
1 ♂	1 ovig. ♀		75/CP. 303	Off Î. de la Possession	46°19'S 51°52'E	155-257
59 ♂	43 ovig. ♀	17 ♀				
		17 juv.	75/CP. 326	Off Î. de la Possession	46°21'S 51°52'E	135-145
1 ♂	2 ♀		3/11	E of Kerguelen Is.	49°25'S 71°51'E	620-650
1 ♂			22/58	NE of Kerguelen Is.	48°58'S 70°51'E	90-105
5 ♂	4 ♀		23/59	SE of Kerguelen Is.	49°59'S 70°01'E	158
		1 juv.	24/61	SE of Kerguelen Is.	50°10'S 69°48'E	195
1 ♂	1 ♀		26/63	Off Crozet Islands	46°21'S 51°55'E	230
1 ♂		2 juv.	26/64	Off Crozet Islands	46°24'S 51°59'E	180

## Suborder ANTHURIDEA

## Family Paranthuridae

*Colanthurus pingouin* sp. nov.

1 ovig. ♀	72/DC. 289	E of Îs. des Pingouins	46°23'S 50°32'E	155-187
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Material	Station no.	Locality	Co-ordinates	Depth (m)
<i>Paranthura possessia</i> sp. nov.				
1 ♀	9/CP. 74	Off Î. de la Possession	46°22'S 51°54'E	150-160
1 ♂ 4 ovig. ♀ 7 ♀	46/CP. 204	Between Possession and Î. aux Cochons	46°10'S 50°14'E	375-490
1 ♀	68/CP. 273	S of Î. aux Cochons	46°17'S 49°37'E	275
1 ♀	75/CP. 303	Off Î. de la Possession	46°19'S 51°52'E	155-257
2 ♀ 2 juv.	78/CP. 319	Between Possession and Î. de l'Est	46°23'S 51°58'E	142-170

## Suborder FLABELLIFERA

## Family Aegidae

*Aega falklandica* Kussakin, 1967

1 ovig. ♀ 4 juv.	25/CP. 134	N of Marion Is.	46°45'S 37°56'E	185-252
1 ♀	68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	262-270

*Aega semicarinata* Miers 1875a

1 ♀	9/CP. 63	Off Î. de la Possession	46°21'S 51°51'E	126-141
1 juv.	9/CP. 64	Off Î. de la Possession	46°10'S 51°49'E	120-150
1 juv.	9/CP. 74	Off Î. de la Possession	46°22'S 51°54'E	120-160
1 ♀	10/CL. 76	NE of Marion Is.	46°52'S 37°52'E	45
2 ♂ 1 ovig. ♀ 2 juv.	42/CP. 197	Between Possession and Î. aux Cochons	46°21'S 51°34'E	172-220
1 juv.	72/DC. 289	E of Îs. des Pingouins	46°23'S 50°32'E	155-187
1 ovig. ♀	75/CP. 326	Off Î. de la Possession	46°21'S 51°52'E	135-187

## Family Cirolanidae

*Cirolana nitida* Hale, 1952

1 ♂ 4 ♀	9/CL. 61	Off Î. de la Possession	46°22'S 51°50'E	75-104
± 100 adults and juv.	9/CL. 63	Off Î. de la Possession	46°21'S 51°51'E	126-141
1 ♀ 1 juv.	9/CL. 66	Off Î. de la Possession	46°23'S 51°52'E	90-110
1 ♂ 1 ♀	40/DC. 186	Off Crozet Islands	46°21'S 51°33'E	190
1 ♀	42/CP. 197	Between Possession and Î. aux Cochons	46°21'S 51°34'E	172-220
1 ♀ 1 juv.	50/DC. 216	Between Possession and Î. aux Cochons	45°51'S 50°38'E	150
1 ♀ 1 juv.	57/DC. 241	NW of Î. aux Cochons	45°46'S 50°05'E	195-200
1 ♀	60/DC. 248	W of Î. aux Cochons	46°02'S 49°48'E	245-250
1 ♀ 12 juv.	71/DC. 283	Off Î. aux Cochons	46°37'S 50°39'E	268-270
1 ♂	74/DC. 296	E of Îs. des Pingouins	46°17'S 50°47'E	290
1 ovig. ♀	75/CL. 305	Off Î. de la Possession	46°21'S 51°50'E	120
± 100 adults and juv.	75/CL. 306	Off Î. de la Possession	46°20'S 51°53'E	145
± 500 adults and juv.	75/CL. 307	Off Î. de la Possession	46°21'S 51°52'E	125
± 100 adults and juv.	75/CL. 308	Off Î. de la Possession	46°20'S 51°52'E	150

## Family Sphaeromatidae

*Dynamenella eatoni* (Miers, 1875b)

1 ?	18/RK. 109	NE of Marion Is.	46°49'S 37°56'E	138
1 ♂	21/DC. 118	NE of Marion Is.	46°53'S 37°52'E	50
2 ♂ 4 ♀	22/DC. 124	NE of Marion Is.	46°52'S 37°51'E	30
1 ♀ 1 juv.	24/CC. 128	NE of Marion Is.	46°52'S 37°52'E	52
1 ♂	75/CL. 307	Off Crozet Islands	46°21'S 51°52'E	125

*Euvallentinia darwini* (Cunningham, 1871)

1 ♂	52/DC. 224	Between Possession and Î. aux Cochons	46°06'S 50°19'E	50-53
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Material	Station no.	Locality	Co-ordinates	Depth (m)
<b>Suborder GNATHIIDEA</b>				
<b>Family Gnathiidae</b>				
<i>Bathynathia porca</i> sp. nov.				
1 ♂ 1 ovig. ♀	60/DC. 248	W of Î. aux Cochons	46°02'S 49°48'E	245-250
<i>Euneognathia gigas</i> (Beddard, 1886)				
2 ♀	59/DC. 252	W of Î. aux Cochons	45°59'S 49°59'E	210-217
1 ♂	68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	262-270
<i>Gnathia antarctica</i> (Studer, 1884)				
1 ♀	28/DC. 143	S of Prince Edward Is.	46°43'S 37°57'E	246-285
1 ♂	55/CP. 237	NE of Îs. des Apôtres	45°57'S 50°21'E	150
1 ♂ 1 ovig. ♀ 1 ♀	68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	262-270
1 ♀	77/DC. 314	Between Possession and Î. de l'Est	46°25'S 51°59'E	247-270
<b>Suborder ASELOTA</b>				
<b>Family Dendrotonidae</b>				
<i>Acanthomunna spinipes</i> (Vanhöffen, 1914)				
3 ♀	9/CP. 75	Off Î. de la Possession	46°19'S 51°52'E	150-340
1 ♀	42/CP. 197	Between Possession and Î. aux Cochons	46°21'S 51°34'E	172-220
1 ♂ 2 ovig. ♀	68/CP. 275	SW Î. aux Cochons	46°16'S 49°37'E	262-270
1 ♂	75/CP. 303	Off Î. de la Possession	46°19'S 51°52'E	155-257
1 ♂	78/CP. 319	Between Possession and Î. de l'Est	46°23'S 51°58'E	142-170
<b>Family Ilyarachnidae</b>				
<i>Echinozone</i> cf. <i>spicata</i> (Hodgson, 1910)				
1 ♀	48/CP. 209	Between Possession and Î. aux Cochons	46°05'S 50°37'E	140-200
1 ♀	54/DC. 234	NE of Îs. des Apôtres	45°55'S 50°20'E	130-145
3 ♀	59/DC. 252	W of Î. aux Cochons	45°59'S 49°59'E	210-217
1 ♂	60/DC. 248	W of Î. aux Cochons	46°02'S 49°48'E	245-250
1 ♂	68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	262-270
1 ♀	74/DC. 296	E of Îs. des Pingouins	46°17'S 50°47'E	290
<i>Ilyarachna crozetensis</i> sp. nov.				
1 ♀	46/CP. 204	Between Possession and Î. aux Cochons	46°10'S 50°14'E	375-490
1 ♀	57/DC. 241	NW of Î. aux Cochons	45°46'S 50°05'E	195-200
1 ♂	60/DC. 248	W of Î. aux Cochons	46°02'S 49°48'E	245-250
2 ♀	64/DC. 268	W of Î. aux Cochons	46°02'S 49°08'E	900-930
<b>Family Jaeropsidae</b>				
<i>Jaeropsis marionis</i> Beddard, 1886				
1 ♀ 2 juv.	26/64	Off Crozet Islands	46°24'S 51°59'E	180
<b>Family Janiridae</b>				
<i>Notasellus sarsi</i> Pfeffer, 1887				
1 ♂	9/CP. 75	Off Î. de la Possession	46°19'S 51°52'E	150-340
1 ♀	42/CP. 197	Between Possession and Î. aux Cochons	46°21'S 51°34'E	172-220

Material	Station no.	Locality	Co-ordinates	Depth (m)
1 ♂ 3 ♀	48/CP. 209	Between Possession and Î. aux Cochons	46°05'S 50°37'E	140-200
2 ♀	54/DC. 234	NE of Îs. des Apôtres	45°55'S 50°20'E	130-145
10 ♀ 9 juv.	61/DC. 255	W of Î. aux Cochons	46°05'S 50°08'E	67
2 ♂ 2 ♀	62/CP. 257	W of Î. aux Cochons	46°05'S 50°01'E	201
2 ovig. ♀ 2 ♀	68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	262-270
1 ♀	78/CP. 319	Between Possession and Î. de l'Est	46°23'S 51°58'E	142-170
1 ovig. ♀	26/64	Off Crozet Islands	46°24'S 51°59'E	180
<b>Family Munnidae</b>				
<i>Munna neglecta</i> Monod, 1931				
2 ♂	9/CP. 75	Off Î. de la Possession	46°19'S 51°52'E	150-340
1 ♂	39/DC. 178	Off Crozet Islands	46°20'S 51°32'E	330-600
1 ♂ 1 ♀	78/CP. 319	Between Possession and Î. de l'Est	46°23'S 51°58'E	142-170
9 ♂ 4 ovig. ♀ 3 ♀	26/64	Off Crozet Islands	46°24'S 51°59'E	180
<i>Paramunna foresti</i> Carvacho, 1977				
1 ovig. ♀	8/CP. 64	Off Î. de la Possession	46°10'S 51°49'E	120-150
<i>Paramunna kerguelensis</i> Vanhöffen, 1914				
2 ♀	68/CP. 275	SW of Î. aux Cochons	46°16'S 49°37'E	270-262
1 ovig. ♀	78/CP. 319	Between Possession and Î. de l'Est	46°23'S 51°58'E	142-170

## SYSTEMATIC DISCUSSION

## Suborder VALVIFERA

## Family Arcturidae

*Antarcturus aculeatus* Kussakin

*Antarcturus aculeatus* Kussakin, 1967: 281, figs 36-38.

*Previous records*

North coast of Patagonia, 400-500 m.

*Remarks*

Kussakin (1967) noted the extreme variability of this species with regard to the spination of the cephalon, pereon, and pleon. This variability is again noted in the present material and is apparently unrelated to sexual or geographic differences. The specimens are consistent in the structure of appendages and agree with the description and figures given by Kussakin. The enormous distance between Patagonia and the Crozet Islands gives pause, yet no differences could be detected on which to separate the two populations.

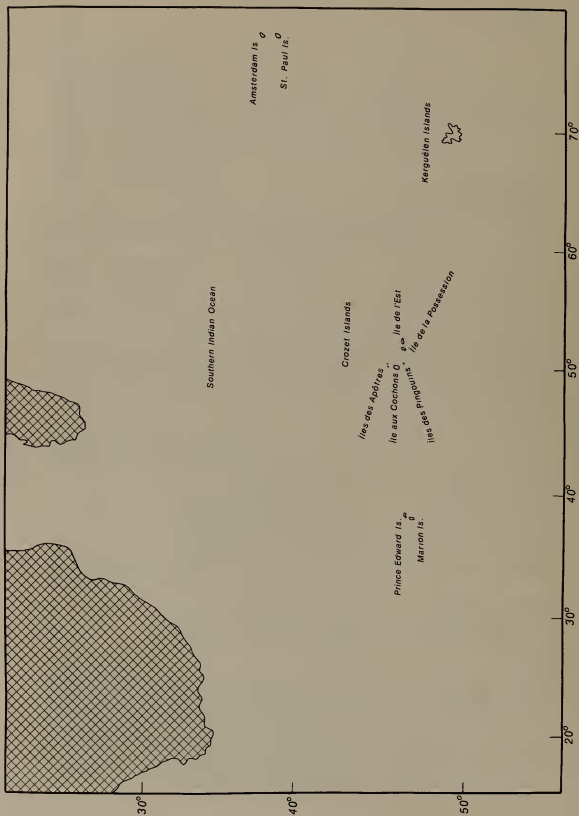


Fig. 1. Map showing island localities.



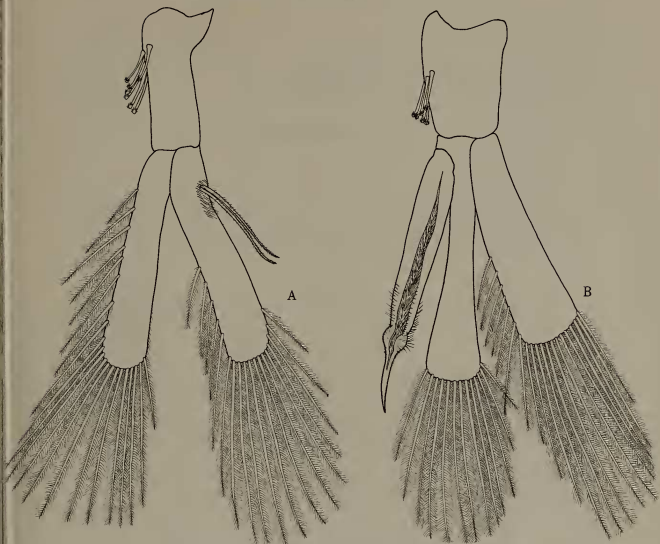


Fig. 2. *Astacilla marionis*. A. Pleopod 1 male. B. Pleopod male.

*Astacilla marionis* Beddard

Fig. 2

*Astacilla marionis* Beddard, 1886: 107, pl. 25 (fig. 5). Studer, 1889: 159. Tattersall, 1921: 243. Nordenstam, 1933: 121.

*Astacilla kerguelensis* Vanhöffen, 1914: 523, fig. 54. Tattersall, 1921: 243. Nordenstam, 1933: 121. Hale, 1946: 172, figs 5-6. Kussakin, 1967: 299.

*Astacilla kerguelensis* [sic]: Carvacho, 1977: 179.

*Previous records*

Kerguelen Island, 4-183 m; Marion Island, 200 m.

*Remarks*

Tattersall (1921) suggested that Beddard's and Vanhöffen's species were perhaps identical. With material from Marion and Prince Edward Islands,

Kerguelen Island, and the intervening Crozet Islands available, this suggestion can be supported. Comparison of material reveals no differences between the three populations. A certain variation is seen in the degree of tuberculation of pereonite 4, with females more tuberculate than males.

### Family Pseudidotheidae

#### *Arcturides cornutus* Studer

#### Fig. 3

*Arcturides cornutus* Studer, 1882: 57; 1884: 15, pl. 1 (fig. 4); 1889: 159, pl. 25 (fig. 2). Beddard, 1886: 108. Ohlin, 1901: 275. Nordenstam, 1933: 113. Hale, 1946: 169.  
*Arcturides tribulus* Hale, 1946: 168, figs 3-4. Kussakin, 1967: 269. Carvacho, 1977: 178.  
*Arcturides acuminatus* Sheppard, 1957: 180, figs 17-18.

#### *Previous records*

Off Kerguelen Island, 47-274 m; off Marion Island, 620 m; off Prince Edward Island, 59 m.

#### *Remarks*

Hale (1946), in his description of *A. tribulus*, suggests that this species may be regarded as a variety of *A. cornutus*, and that the dorsal pereonal spination disappears with age. This dorsal spination is certainly a variable feature, but not obviously related to age of the specimens, as in some samples juveniles as well as mature adults are dorsally completely smooth, while in other samples the dorsal spines may be short and barely indicated by tiny knobs in small specimens, and well developed in mature specimens. Neither can the degree of spination be correlated with populations from Crozet, Marion, and Kerguelen Island groups. This mixture of smooth and spinose specimens from the same samples, together with the completely uniform appendages, removes any doubt that *A. tribulus* is a synonym of *A. cornutus*.

Sheppard (1957) described *Arcturides acuminatus* from Prince Edward Island, based on a single male and female, and separated her species from the *cornutus-tribulus* complex of Kerguelen on four features; the more apically acute pleotelson, the less developed body spination, the raised coxal insertions, and a different maxillipedal endite. Examination of Sheppard's types shows that the pleotelsonic apex is well within the range of variation seen in large samples of *A. cornutus*. Variation in body spination has been discussed above. The raised coxal insertion would seem to be a feature varying with age, becoming more marked in larger specimens. No difference could be seen in the maxillipedal structure between the types of *A. acuminatus*, and material from Kerguelen, Crozet, Marion, and Prince Edward Islands. Sheppard supported the formation of a new species by invoking the distance between Kerguelen and Prince Edward Islands. As material from these localities as well as the interlying Crozet Islands has been examined, and as the four distinguishing features of *A. acuminatus* are



Fig. 3. *Arcturides cornutus*. A. Right mandible. B. Left mandible. C. Maxilla 1. D. Maxilla 2. E. Maxilliped. F. Pleopod 1 male. G. Pleopod 2 male (setae omitted).

shown to be largely due to individual variation, there can be little doubt that there is a single species, viz. *A. cornutus*, spread over all three groups of subantarctic islands.

The structure of the male pleopods 1 and 2 as well as the mouthparts again raises the question of the reality of the Family Pseudidotheidae. *Holidotea* has already been removed to the Arcturidae (Kensley 1975a), and a careful evaluation of *Pseudidothea* and *Arcturides* is required to resolve this question.

#### Suborder ANTHURIDEA

#### Family Paranthuridae

#### *Colanthur pingouin* sp. nov.

#### Fig. 4

#### *Description*

Integument not indurate; cephalon, pereonites, and pleon with middorsal blotch of red-brown pigment. Body proportions:  $C < 1 > 2 = 3 < 4 > 5 > 6$ . Cephalon with dorsolateral eyes. Pereonite 7 a tiny apodous crescent anterior to pleonite 1, only dorsally visible. Pleonites free, 1-4 subequal, 5 twice length of 4, 6 wider than 5, with posterodorsal margin consisting of two broadly rounded lobes. Telson ovate, distally broadly rounded.

Antennular peduncle 4-segmented; flagellum of single setose article. Antennal peduncle 5-segmented, second segment grooved to accommodate antennule; flagellum of single setose article. Mandible reduced, lacking palp. Maxilla lancet-like, with thirteen distal serrations. Maxilliped elongate, of a single segment bearing several setae distally, rami basally fused. Pereopod 1 with fusion line of unguis set obliquely on dactylus; propodus expanded, almost circular, palm with outer convex flange, produced proximally into triangular process, and inner straight ridge armed with row of simple spines; row of 20 close-set fringed spines on inner proximal surface; carpus triangular, with few setae distally. Pereopod 2 less robust than 1; propodus less expanded; palm convex, armed with seven sensory spines. Posterior pereopods with three sensory spines and several fringed scales on posterior margin, and two fringed spines on distal margin; carpus about half length of propodus, anterior margin only slightly shorter than posterior margin, latter armed with two sensory spines and several fringed scales. Pleopod 1 exopod operculiform, endopod about one-quarter width, and slightly shorter than exopod, with five distal plumose setae. Uropodal exopod oval, bearing simple and plumose marginal setae; endopod shorter than basis, reaching just beyond telsonic apex.

#### *Material*

Holotype PM Is. 1016, 1 ovigerous female TL 5.6 mm, 72/DC.289 off Îles des Pingouins, Crozet, 155-187 m.

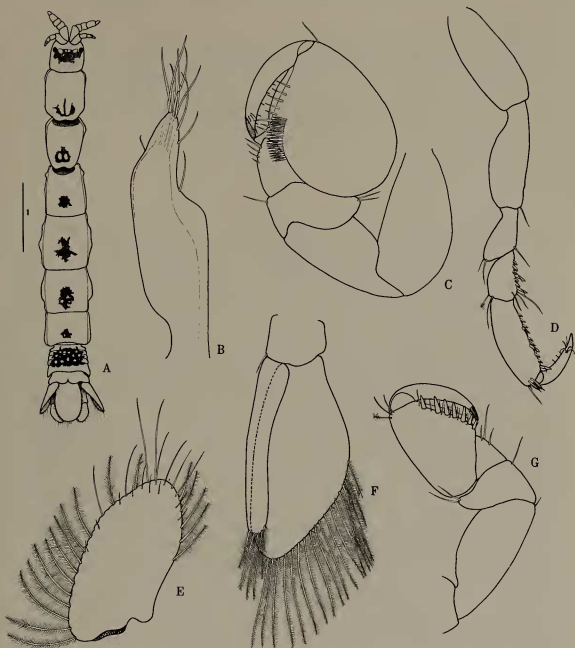


Fig. 4. *Colanthurus pingouin*. A. Holotype in dorsal view. B. Maxilliped. C. Pereopod 1. D. Pereopod 6. E. Uropodal exopod. F. Pleopod 1. G. Pereopod 2.

#### Remarks

Of the seven species of *Colanthurus* described, none possesses such a broad almost circular propodus of pereopod 1 as does the present species. The number of fringed spines in a comb-like formation on the inner surface of the propodus (which is characteristic of the genus) is higher than in the other species. The pigment pattern (apparently persistent) is also unique.

*Etymology*

The specific name, used as a noun in apposition, is taken from the type locality, Îles des Pingouins in the Crozet group.

*Paranthura possessia* sp. nov.

Fig. 5, 6

*Description**Female*

Integument moderately indurate, uropods and telson strongly indurate. Body proportion:  $C < 1 < 2 = 3 < 4 > 5 > 6 > 7$ . Cephalon with anterolateral corners extending beyond triangular rostrum. Eyes well pigmented, dorsolateral. Pleonites separate; pleonite 6 longest, with middorsal slit in posterior margin. Telson lanceolate, apex narrowly rounded, dorsally gently convex.

Antennule with 4-segmented peduncle, first segment longest and broadest, segment 4 short; flagellum of six articles. Antenna with 5-segmented peduncle, segment 2 grooved to accommodate antennule; flagellum of three articles, two distal articles very short. Mandibular palp 3-segmented, first and third segments subequal in length, second segment twice length and broader, third segment with row of ten to twelve spines. Maxilla slender, lancet-like, with distal barbs. Maxilliped 2-segmented, terminal segment bearing several setae distally and on medial margin. Pereopod 1 subchelate, propodus proximally broad, palm with convex ridge on inner face bearing irregular double row of setae; outer face slightly concave, with single row of setae and proximal rounded process; carpus triangular, with several setae distally. Pereopods 2 and 3 similar, subchelate, more slender and elongate than pereopod 1; propodal palm with eight sensory spines. Pereopods 4-7 similar; propodus elongate/rectangular with four sensory spines on posterior margin; carpus with anterior and posterior margins subequal in length; posterior margin with four sensory spines. Pleopod 1 exopod operculiform; endopod narrow, slightly shorter than exopod; basis with two retinaculae. Uropodal exopod with outer margin slightly sinuous, apex rounded; endopod slightly longer than wide, rounded, reaching to telsonic apex.

*Male*

Eyes slightly larger than in female. Antennules elongate, with whorls of filiform aesthetascs. Pleopod 2 with copulatory stylet on endopod extending well beyond ramus, distally narrowed and recurved, apex rounded; distal half bearing very fine spinules.

*Material*

Holotype PM. Is. 1014, 1 ovig. female TL 14,0 mm.

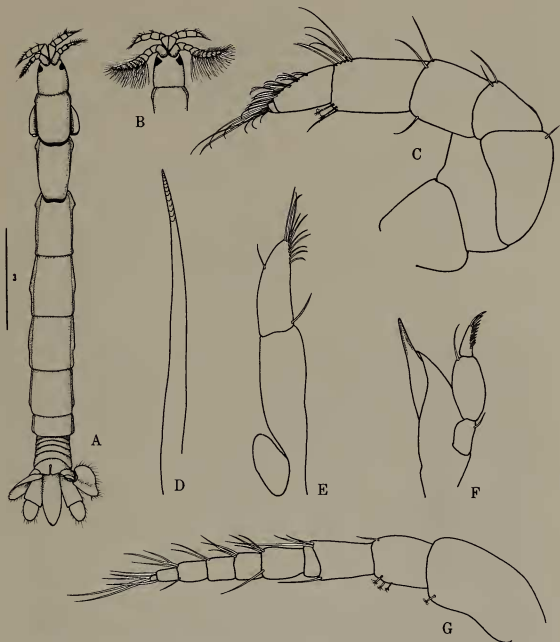


Fig. 5. *Paranthura possessia*. A. Female in dorsal view. B. Cephalon of male. C. Antenna. D. Maxilla. E. Maxilliped. F. Mandible. G. Antennule female.

Paratype PM. Is. 1015, 1 ovig. female TL 14,0 mm 4 female TL 13,5 14,2 14,2 15,6 mm.

Paratypes USNM 173119, 1 male TL 13,9 mm 1 ovig. female TL 15,6 mm. 2 female TL 14,1 15,6 mm

Paratypes SAM-A16771, 1 ovig. female TL 15,0 mm 1 female TL 15,5 mm. 46/CP. 204 between Île de la Possession and Île aux Cochons, 375-490 m.

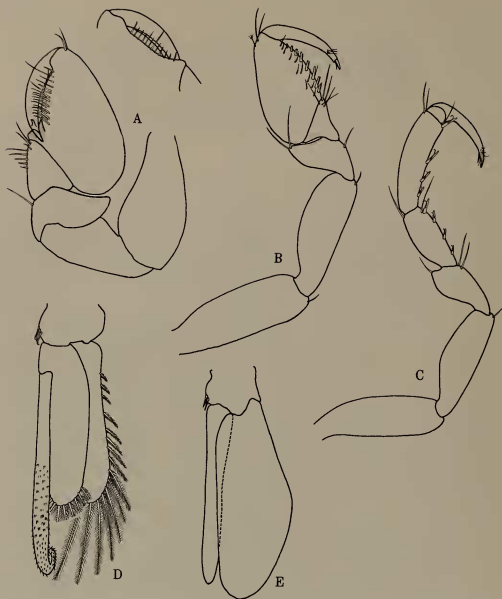


Fig. 6. *Paranthura possessia*. A. Pereopod 1, with outer view of palm. B. Pereopod 2. C. Pereopod 7. D. Pleopod 2 male. E. Pleopod 1 (setae omitted).

Additional material: 2 female 2 juv. 78/CP.319, 1 female 75/CP.303, 1 female 9/CP.74, 1 female 68/CP.273

#### Remarks

The present material to some extent resembles two species described by Kussakin (1967). *P. argentinae*, however, has a broader telson, a narrow and non-sinuous uropodal exopod, and the proportions of the three mandibular palpal segments also differ. *P. antarctica* differs from *P. possessia* in having fewer



antennular flagellar articles, a non-sinuuous uropodal exopod, and in the relative proportions of the antennal peduncle segments.

*P. neglecta* Beddard, (1886) was described from Kerguelen Island, but not figured. Examination of the type has shown it to be a juvenile, with pereonite 7 very short and lacking legs. The telson of this specimen is much more broadly oval than the present species, while the uropodal exopod is very obviously notched.

#### *Etymology*

The specific name derives from the type locality, Île de la Possession.

#### Suborder GNATHIIDEA

#### Family Gnathiidae

#### *Bathygnathia porca* sp. nov.

Figs 7-8

#### *Description*

##### *Male*

Body almost four times longer than wide, widest at fourth free pereonite. Cephalon indurate, dorsally concave; lacking eyes; rostrum at base more than half width of cephalon; rostrum and ventrolateral walls of buccal cavity fused; rostral apex some distance posterior to rounded apex of ventrolateral walls of buccal cavity, with subapical row of eight setae. Free pereonites 1 and 2 short, 3-5 somewhat longer, pereonite 7 very reduced, lacking free lateral margins. Pleonites with lateral extensions acute, becoming shorter posteriorly. Telson triangular, apically narrowly rounded.

Antennular peduncle 3-segmented, basal segment slightly curved, segment 2 shorter than 1 or 3, latter with several simple setae; flagellum of five articles, three distal articles each with single aesthetasc. Antennal peduncle of four segments, distal segment almost as long as three proximal segments together; flagellum of seven articles. Mandible curved towards midline in dorsal view, with dorsal denticle at proximal third, ventral margin slightly sinuous. Maxillipedal palp 4-segmented, two basal segments much broader than two distal segments, all with plumose setae on outer margins; endite reaching to midlength of second palpal segment, with eight retinaculae on medial margin. Pylopod operculiform, 5-segmented, second segment broadest and longest, with plumose setae on median margin, terminal segment minute. Pereopods similar, 1 and 2 more slender/elongate than posterior three pairs, armed with numerous spines and setae. Pleopods biramous, similar, rami lamellar, oval. Uropods biramous, reaching to telsonic apex.

##### *Female*

Body swollen, cylindrical. Cephalon broadly triangular, rostrum dorsally convex. Two anterior free pereonites short, following three pereonites broad and

long. Pleon as in male. Pereopods similar to male, but posterior three pairs not as robust. Five pairs oostegites present, anterior pair very small.

*Material*

Holotype PM. Is. 1019, 1 male TL 8,0 mm; allotype PM. Is. 1020, 1 ovig. female TL 8,2 mm, 60/DC.248 west of Île aux Cochons, 245–250 m.

*Remarks*

Four species of *Bathynathia* have been described, viz. *B. bathybius* Beddard, 1886, from the North Atlantic, *B. curvirostris* Richardson, 1909, also from the North Atlantic, *B. affinis* Birstein, 1963, from off the Kurile Islands, and *B. magnifica* Moreira, 1977 (the only species with eyes), off southern Brazil. The three blind species are very similar, the main differences lying in the rostrum and appendages. The present species most closely resembles *B. affinis*, especially in the overall body proportions. The main differences lie in the more rounded distal margin of the rostrum-ventrolateral buccal walls, and the broader and dorsally unflexed mandibles of *B. porca*. Birstein (1963) does not illustrate or mention a minute terminal segment in the pylopod, while the two subterminal segments of this appendage are relatively more slender in *B. porca*.

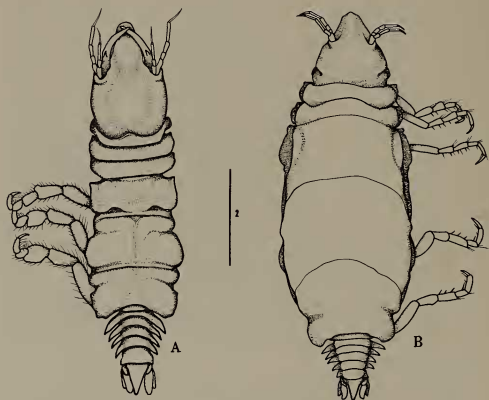


Fig. 7. *Bathynathia porca*. A. Male. B. Female.

*Etymology*

The specific name 'porca' meaning pig, derives from the type locality, Îles aux Cochons (Island of Pigs).

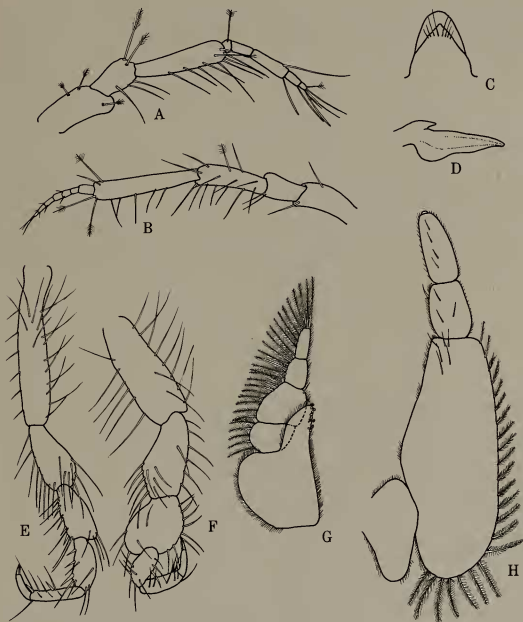


Fig. 8. *Bathynathia porca*. A. Antennule. B. Antenna. C. Rostrum male. D. Mandible male. E. Pereopod 1 male. F. Pereopod 5 male. G. Maxilliped. H. Pylopod male.

## Suborder ASELLOTA

## Family Ilyarachnidae

*Echinozone* cf. *spicata* (Hodgson)

Fig. 9

*Notopais spicatus* Hodgson, 1910: 70, pl. 8 (fig. 1).

*Pseudarachna spicata*: Hale, 1937: 43, figs 18-19. Kussakin, 1967: 313, fig. 54.

*Ilyarachna spicata*: Wolff, 1962: 95. Amar & Roman, 1974: 579, pl. 11.

*Echinozone spicata*: Schultz, 1976: 8, figs 3-4.

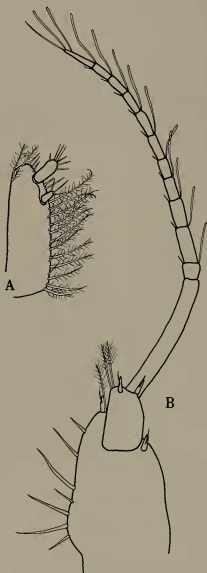


Fig. 9. *Echinozone* cf. *spicata*. A. Uropod. B. Antennule.

*Previous records*

Numerous circum-antarctic records.

*Remarks*

The biramous uropod, and the lack of a mandibular palp place this material in *Echinozoe*.

The present material, although not coming from the Antarctic, closely resembles the species recorded from almost the entire circumference of the Antarctic Continent. The spination of the cephalon and the first five pereonites and coxal plates agree with the abovementioned figures and descriptions. Pereonites 6 and 7 possess small tubercles as Kussakin (1967) noted in his material. Schultz (1976) and Hale (1937) do not figure or mention these.

Slight differences are apparent between the present material and the antarctic material, but these can probably be accounted for in terms of variation between relatively isolated populations. The outer (lower) uropodal ramus of the Crozet material is longer than in the antarctic material, relative to the length of the inner (upper) ramus. The antennular flagellum has eleven or twelve articles in the Crozet specimens, thirteen in Kussakin's material, sixteen in Schultz's. Schultz (1976, fig. 3D, E) shows the female pleonal operculum with a longitudinal ridge bearing about nine spines, while the number in the Crozet specimens varies between six and seven.

*Ilyarachna crozetensis* sp. nov.

Figs 10-11

*Description*

Cephalon with lateral flanges anteriorly rounded, laterally broadly angular; dorsal convex areas with varying number of short spines (one or two in male, four to ten in female); anterior margin concave, with faint rostral point. Pereonites 1 to 3 subequal in middorsal length. Pereonite 1 slightly narrower than 2, with rounded lateral process bearing single spine. Pereonite 2 laterally rounded, with single spine. Pereonites 3 and 4 with anterolateral flange appearing as spine in dorsal view. Pereonites 5 to 7 laterally rounded. Pereonites 1 to 4 with row of fifteen to nineteen small equidistant spines on anterior margin. Pleotelson preceded by single narrow pleonal segment, triangular, dorsally convex, apex narrowly rounded.

Antennular basal segment broadest at base with single spine at inner distal angle, two spines on somewhat produced outer distal angle; second segment half length of basal segment; third segment shorter than second; flagellum of nine articles in female, twenty-two in male. Basal antennal segment with spine on rounded lateral process. Mandibular palp basal segment slightly curved, equal in length to terminal segment, second segment just less than twice length of basal

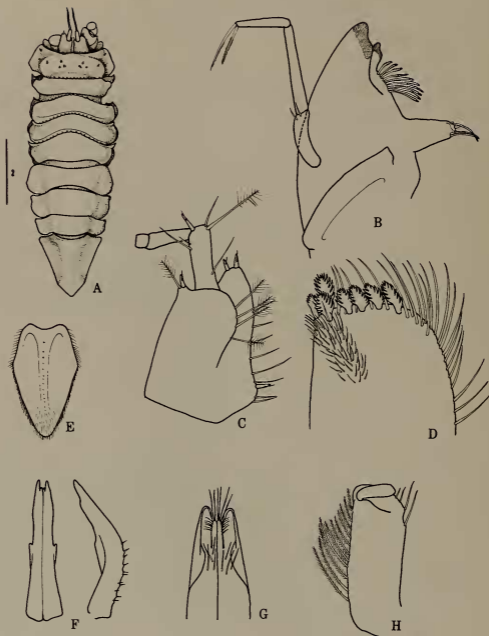


Fig. 10. *Ilyarachna crozetensis*. A. Holotype in dorsal view. B. Mandible. C. Antennular base. D. Apex of maxillipedal endite. E. Operculum female. F. Pleopod 1 male in dorsal and lateral view. G. Apex of pleopod 1 male. H. Uropod.

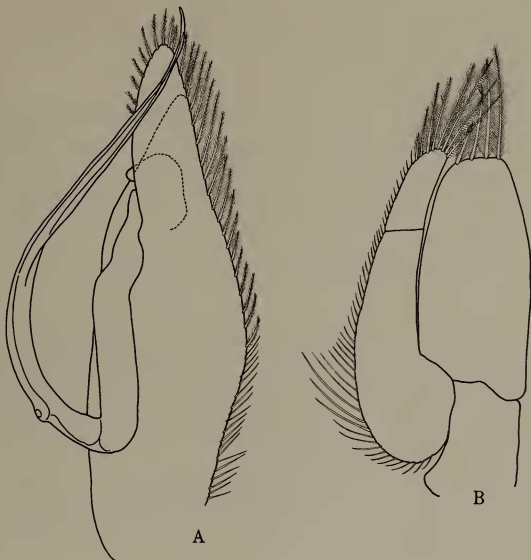


Fig. 11. *Ilyarachna crozetensis*. A. Pleopod 2 male. B. Pleopod 3 male.

segment; third segment with two elongate terminal fringed spines; incisor rounded-truncate; lacinia obliquely truncate; ten spines in spine row; molar with three or four small distal spines and three fringed setae. Maxillipedal endite with numerous elongate simple and fringed setae plus several expanded fringed spines, seven coupling hooks; epipod broadly oval, reaching beyond second palpal segment. Pereopod 1 dactylus one-quarter length of propodus; latter tapering distally; carpus equal in length to propodus, ventral margin slightly concave, with row of simple setae; ischium with two spines on dorsal margin; four or five spines on distal margin of basis; carpus with spinose process. Pereopod 5 dactylus equal in length to propodus, carpus expanded, broader proximally than distally. Operculum in female distally rounded, median longitudinal ridge bearing row of short spine-setae. Pleopod 1 male strongly

arched, outer lobes of apex parallel, distally rounded; inner lobes considerably shorter than outer, bearing several short and long setae. Uropodal basis elongate-rectangular; single ramus present.

#### *Material*

Holotype PM. Is. 1017, 1 male TL 5,6 mm, 60/DC.248 west of Île aux Cochons, 245–250 m.

Paratype PM. Is. 1018, 1 female damaged, 60/DC.248 west of Île aux Cochons, 245–250 m.

Paratype PM. Is. 1018, 1 female TL 8,0 mm, 46/CP.204 between Île de la Possession and Île aux Cochons, 375–440 m.

Paratype SAM-A16772, 1 female TL 8,1 mm, 57/DC.241 north-west of Île aux Cochons, 195–200 m.

Paratypes USNM 173120, 2 female TL 8,1 mm 8,4 mm, 64/DC.268 west of Île aux Cochons, 900–930 m.

#### *Remarks*

The present species from the vicinity of the Crozet Islands is a member of the *Ilyarachna antarctica-nordenstami-kermadecensis* complex of species. Wolff (1962: 103) used a series of twenty-one characters in separating these species which previously had been regarded as the single species, *I. antarctica* Vanhöffen. The present material has been examined for these twenty-one characters in an attempt to establish its distinctness. Table 1 shows the distribution of these characters amongst the four species involved.

From Table 1 it is obvious that the present species has features in common with all three described species as well as features of its own, and for these reasons, a new species is erected. More material from an even wider range of localities would help to dispel the doubt that a single widespread and variable species is involved here.

#### *Etymology*

The specific name derives from the island group in which vicinity the specimens were collected.

### Family Munnidae

#### *Paramunna foresti* Carvacho

#### Fig. 12

*Paramunna foresti* Carvacho, 1977: 180, fig. 2.

#### *Previous records*

Off Kerguelen Island, 32 m.



TABLE 1

Distribution of 21 characters amongst four species of *Ilyarachna*.

	<i>crozetensis</i>	<i>antarctica</i>	<i>kermadecensis</i>	<i>nordenstami</i>
Lateral corners of pereonite 1: with rounded process . . . . .	+	+	+	—
Lateral corners of pereonite 3: with small pointed process . . . . .	+	+	+	—
Coxal plates of pereopods 1 and 2: with process . . . . .	+	+	+	—
♀ Operculum: keel with spines . . . . .	+	+	+	—
Dorsal surface of pleotelson: furrows indistinct . . . . .	+	+	+	+
Pereonite 5: as broad as 2 . . . . .	+	—	+	+
Pereopod 1 carpus: few simple setae . . . . .	+	+	—	+
♀ Antennule: broadest at base . . . . .	+	—	—	+
Segment 2: half length of 1 . . . . .	+	—	—	—
Segment 3: about five-twelfths of 1 . . . . .	+	+	—	—
Flagellum: 9 articles . . . . .	+	—	—	+
♂ Antennule: Flagellum 22 articles . . . . .	+	—	—	—
Mandible: apex blunt . . . . .	+	—	+	—
10 spines in row . . . . .	+	—	—	—
Palpal segment 2 about twice length of 1 or 3 . . . . .	+	—	—	+
Maxillipedal epipod: reaching fourth palpal segment . . . . .	+	—	+	—
Coupling hooks: 7 . . . . .	+	—	—	—
Pereopod 1 ischium: 2 spines . . . . .	+	—	—	—
Pereopods 5-7: dactylus as long as propodus . . . . .	+	—	—	—
Pleopod 1 ♂: outer lobes straight . . . . .	+	—	+	—

+ denotes presence of character.

Fig. 12. *Paramunna foresti*, uropod.

*Remarks*

Carvacho (1977) shows the unusual hook-like uropods of this species in his figure of the entire animal, but does not mention them in the description. The uropods, which consist of a large, setiferous apically hooked ramus and a very reduced dorsal ramus, appear to be unique in *Paramunna* and are figured here in detail.

*Paramunna kerguelensis* Vanhöffen

*Paramunna kerguelensis* Vanhöffen, 1914: 574, fig. 105. Menzies, 1962: 47, fig. 7.

*Previous records*

Off Kerguelen Island; southern Chile.

*Remarks*

The present material agrees well with both Menzies's and Vanhöffen's descriptions; however, neither author figures short spines on lateral pereonite margins. These are part of a brittle hyaline margin and may either vary in number, or be broken or worn off. Menzies notes the apparent lack of a mandibular palp; a 3-segmented palp is present but appears to be easily broken off.

Beddard (1886) mentions five specimens of *Neasellus kerguelensis* in addition to the type, taken from sponges at about 1 200 m. Examination of the slide of these specimens (BM.89.4.27.50) shows them to be specimens of *Paramunna kerguelensis*.

## ZOOGEOGRAPHIC COMMENTS

The position of Marion and Prince Edward Islands, and the Crozet Islands within the Antarctic-Subantarctic zoogeographic complex has been the subject of some debate. With relatively sparse collecting in the area, faunal affinities tend to be expressed in terms of separate animal groups, an inevitable situation until comprehensive collections are made for any single area. By examining the affinities of just the Isopoda, a partial picture emerges.

Kussakin (1967) lists sixteen species of Isopoda from the Prince Edward-Crozet group and records these as two separate categories in a series of twelve Antarctic-Subantarctic regions. He further suggests, in light of the high percentage of species common to the three island groups under discussion, that the Prince Edward-Crozet group be united with Kerguelen and Macquarie Islands in a single biogeographic category above the 'province' level.

Ekman (1953), in reviewing antarctic zoogeography, mentioned that earlier investigations grouped Prince Edward, Marion, and the Crozet Islands with Kerguelen, Macquarie and Heard Islands, sometimes to be included in the Antarctic Province. Ekman, however, felt it more informative to examine Kerguelen separately. On the basis of the fish and echinoderm fauna, Ekman (1953: 219) came to regard Kerguelen as lying in a transitional and mixed region.

Briggs (1974) included in his Kerguelen Province, McDonald, Heard, Marion, Prince Edward, and Crozet Islands. This Kerguelen Province shows a high degree of endemism (66% for shore fishes, 26% for Holothuria, 55% for sea-urchins, 30% for ascidians). Briggs concluded that it is possible that the Prince Edward-Marion and Crozet group constitutes a separate province within the region.

Turning to the present collection of isopods, the number of species recorded from Marion-Prince Edward and Crozet Islands has been increased from 22 to 38 (see Table 2). 6 species are known only from Prince Edward-Crozet, i.e. the 4 new species described here, plus Cleret's 2 asellote species, while 5 species are recorded from Prince Edward-Crozet and Kerguelen Islands only (giving a 25% endemism, and admitting the probability that the four new species could have a wider range). Of these, the pseudidotheid *Arcturides cornutus* (= *A. tribulus* and *A. acuminatus*), which appears from sample size to be abundant, is considered one of the most significant elements of the fauna. Nineteen species are common to both island groups as well as occurring in other areas. Eleven species (34%) occur at both Prince Edward-Crozet and the Antarctic; only thirteen species (36%) from Prince Edward-Crozet have a widespread austral distribution (both in and out of the Antarctic coastal areas). Two species (6%) are known from Prince Edward-Crozet and South America only.

Four species, viz. *Aega semicarinata*, *Acanthomunna spinipes*, *Dynamanella huttoni*, and *Iais pubescens*, have been recorded from South Africa. *A. semicarinata*, being an opportunist fish parasite, has a fairly wide austral distribution, while *A. spinipes* has been recorded off Natal in 550-680 m, i.e. in South Indian Ocean Central water (Kensley 1978). *D. huttoni* is known intertidally from Lüderitz to Natal, as well as Auckland and Campbell Islands, while *I. pubescens* occurs commensally on a range of larger sphaeromatid isopods from all the Subantarctic islands.

From this mixture of several faunal components it would seem that Andriashev's (1959) term Kerguelen Transitional Province, which would include Prince Edward, Marion, Crozet, and Kerguelen Islands, is the most accurate with regard to the isopod fauna, and is to be preferred to the simpler Kerguelen Province of Knox (1960, 1963) and Powell (1962).

Kussakin lists 48 species of isopods from Kerguelen Islands, to which Carvacho (1977) has added 4 more. The total number of isopod species from the Kerguelen Transitional Province now stands at 61 and the Prince Edward-Crozet fauna of 38 species represents 62% of that total. In view of this relatively even spread of the faunal components of the Prince Edward-Crozet isopods (11 species widespread Antarctic-Subantarctic, 11 species from the Antarctic, 2 from South America, 9 species in common with Kerguelen), it would seem unjustifiable to follow Briggs's suggestion (1974: 177) that the Prince Edward-Marion-Crozet group constitutes a separate province.

TABLE 2

Isopod species recorded from Crozet, Prince Edward, and Marion Islands, with distribution in the geographic categories as given by Kussakin (1967, table 1).

	Antarctica														
	Pacific Sector	Indian Sector	Atlantic Sector	South Georgia	Sandwich	Marion/Prince	Edward	Crozet Is.	Kerguelen Is.	Macquarie Is.	Falkland Is.	Tierra del Fuego	Coast of Argentina	Coast of Chile	Auckland Is./Campbell Is.
<i>Acanthomunna spinipes</i>									X						
<i>Aega falklandica</i>									X			X			
<i>Aega semicarinata</i>									X	X	X	X			X
<i>Antarcturus aculeatus</i>									X					X	
<i>Antarcturus furcatus furcatus</i>		X	X	X	X	X	X		X						
<i>Antarcturus spinosus</i>			X						X						
<i>Antias bicornis</i>									X						
<i>Arcturides cornutus</i>									X	X					
<i>Astacilla marionis</i>									X	X					
<i>Bathynathia porca</i>									X						
<i>Cassidinopsis emarginata</i>						X	X	X	X	X	X	X	X	X	X
<i>Cirolana nitida</i>									X	X					
<i>Colanthurus pingouin</i>									X						
<i>Coulmannia frigida</i>		X	X						X						
<i>Dynamanella eatoni</i>						X	X	X			X	X			X
<i>Dynamanella huttoni</i>									X						
<i>Echinozone cf. spicata</i>		X	X						X						
<i>Euneognathia gigas</i>		X	X	X					X	X					
<i>Euvalentinia darwini</i>									X	X	X	X	X	X	X
<i>Exosphaeroma gigas</i>									X	X	X	X	X	X	X
<i>Gnathia antarctica</i>		X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Iais pubescens</i>						X	X	X	X	X	X	X	X	X	X
<i>Ilyarachna crozetensis</i>									X						
<i>Ilyarachna nordenstami</i>						X	X								
<i>Jaeropsis curvicornis</i>									X	X	X	X	X		
<i>Jaeropsis marionis</i>									X	X					
<i>Microarcturus hirticornis</i>			X	X					X						
<i>Munna instructa</i>									X						
<i>Munna neglecta</i>		X	X	X	X	X	X				X				
<i>Munneurycope murrayi</i>									X						
<i>Munnopsis australis</i>						X	X		X						
<i>Notasellus sarsi</i>		X	X	X	X	X	X	X	X	X			X		
<i>Paramunna foresti</i>									X	X					
<i>Paramunna kerguelensis</i>									X	X		X			
<i>Paranthura possessia</i>									X						
<i>Serolis cornuta</i>		X	X	X	X	X	X		X						
<i>Serolis latifrons</i>									X	X					
<i>Serolis septemcarinata</i>					X	X	X		X				X		X

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## REFERENCES

- AMAR, R. & ROMAN, M. L. 1974. Invertébrés marins des XII<sup>e</sup> et XV<sup>e</sup> Expéditions Antarctiques Françaises en Terre Adélie. 14. Tanaïdes et Isopodes. *Tethys* 5: 561-599.
- ANDRIASHEV, A. P. 1959. Ichthyological investigations of Soviet Antarctic Expedition (1955-1958) and zoogeography of the Antarctic waters. *Int. Oceanog. Congr. Preprints, Am. Ass. Advmt Sci.*: 129-130.
- BEDDARD, F. A. 1884. Report on the Isopoda collected by H.M.S. *Challenger* during the years 1873-76. Part 1. The Genus *Serolis*. *Rep. Voy. Challenger* 33: 1-85.
- BEDDARD, F. A. 1886. Report on the Isopoda collected by H.M.S. *Challenger* during the years 1873-76. Part 2. *Rep. Voy. Challenger* 17: 1-178.
- BIRSTEIN, Y. A. 1963. [English translation, 1973.] *Deep-water isopods (Crustacea, Isopoda) of the north-western part of the Pacific Ocean*. Moscow: Izd-vo Akademii Nauk SSSR.
- BRIGGS, J. C. 1974. *Marine Zoogeography*. New York: McGraw-Hill.
- CARVACHO, A. 1977. Sur une importante collection d'isopodes des Îles Kerguelen. *CNFRA, Paris* 42: 173-191.
- CLERET, J. J. 1971. Deux espèces nouvelles d'isopodes asellotes à l'Île Marion. In: VAN ZINDEREN BAKKER, E. M., WINTERBOTTOM, J. M. & DYER, R. A. eds. *Marion and Prince Edward Islands. Report on the South African Biological and Geological Expedition 1965-1966*. Cape Town: Balkema.
- CUNNINGHAM, R. O. 1871. Notes on the reptiles, Amphibia, Fishes, Mollusca, and Crustacea obtained during the voyage of H.M.S. *Nassau* in the years 1866-1869. *Trans Linn. Soc. Lond.* 27: 465-502.
- DE VILLIERS, A. F. 1976. Littoral ecology of Marion and Prince Edward Islands (Southern Ocean). *S. Afr. J. antarct. Res. suppl.* 1: 1-40.
- EKMAN, S. 1953. *Zoogeography of the Sea*. London: Sidgwick & Jackson.
- FULLER, N. R. 1967. A preliminary report on the littoral ecology of Marion and Prince Edward Islands. *S. Afr. J. Sci.* 63: 248-252.
- HALE, H. M. 1937. Isopoda and Tanaidacea. *Scient. Rep. Australas. Antarct. Exped. (C)* 2 (2): 1-45.
- HALE, H. M. 1946. Isopoda-Valvifera. *Rep. B.A.N.Z. antarct. Res. Exped. 1929-1931 (B)* 5: 161-212.
- HALE, H. M. 1952. Isopoda. Families Cymothoidae and Serolidae. *Rep. B.A.N.Z. antarct. Res. Exped. 1929-1931. (B)* 6: 21-36.
- HODGSON, T. V. 1910. Crustacea. IX. Isopoda. *Nat. Antarct. Exped. 1901-1904. Nat. Hist.* 5 (9): 1-77.
- KENSLEY, B. F. 1975a. Marine Isopoda from the continental shelf of South Africa. *Ann. S. Afr. Mus.* 67: 35-89.
- KENSLEY, B. F. 1975b. Five species of *Jaeropsis* from the southern Indian Ocean. (Crustacea, Isopoda, Asellota). *Ann. S. Afr. Mus.* 67: 367-380.
- KENSLEY, B. F. 1978. The South African Museum's *Meiring Naude* Cruises. Part 7. Marine Isopoda. *Ann. S. Afr. Mus.* 74: 125-157.

- KNOX, G. A. 1960. Littoral ecology and biogeography of the southern oceans. *Proc. R. Soc. (B)* 152: 577-624.
- KNOX, G. A. 1963. The biogeography and intertidal ecology of the Australasian coast. *Oceanography mar. Biol.* 1: 341-404.
- KUSSAKIN, O. G. 1967. [English translation 1968.] Fauna of Isopoda and Tanaidacea in the coastal zones of the Antarctic and Subantarctic waters. *Biol. Reps Sov. Antarct. Exped. 1955-1958*. 3: 220-389.
- MENZIES, R. J. 1962. The zoogeography, ecology, and systematics of the Chilean marine isopods. *Acta Univ. lund.* (2) 57: 1-162.
- MIERS, E. J. 1875a. Description of three additional species of Crustacea from Kerguelen's Island and Crozet Island with remarks upon the genus *Paramoera*. *Ann. Mag. nat. Hist.* (4) 15: 115-118.
- MIERS, E. J. 1875b. Description of new species of Crustacea (and Pycnogonida) collected at Kerguelen's Island by the Rev. A. E. Eaton. *Ann. Mag. nat. Hist.* (4) 16: 73-76.
- MIERS, E. J. 1879. Crustacea. In: An account of the petrological botanical, and zoological collections made in Kerguelen's Land and Rodriguez, during the Transit of Venus Expeditions. *Phil. Trans R. Soc.* 168: 200-214.
- MONOD, T. 1926. Tanaidacea, Isopodes et Amphipodes. *Result. Voyage S.Y. Belgica 1897-1899*: 1-67.
- MONOD, T. 1931. Tanaidacea et Isopodes subantarctiques de la collection Kohl-Larsen du Senckenberg Museum. *Senckenbergiana* 13: 10-30.
- MOREIRA, P. S. 1977. A new deep sea species of *Bathynathia* (Isopoda, Gnathiidea) from the western south Atlantic Ocean. *Bolm Inst. Oceanogr. S Paulo* 26: 11-19.
- NORDENSTAM, A. 1933. Marine Isopoda of the families Serolidae, Idotheidae, Pseudidotheidae, Arcturidae, Parasellidae, and Stenetriidae mainly from the South Atlantic. *Further zool. Results Swed. Antarct. Exped.* 3: 1-284.
- OHLIN, A. 1901. Isopoda from Tierra del Fuego and Patagonia. *Wiss. Ergebn. schwed. Exped. Magellansland* 2: 261-306.
- PEFFER, G. 1887. Die Krebse von Sud-Georgien nach des Ausbeute der Deutschen Station 1882-83. *Jahrb. wiss. Anst. Hamburg* 4: 1-110.
- POWELL, A. W. B. 1962. *Shells of New Zealand*. 4th ed. Christchurch: Whitcomb & Tombs.
- RICHARDSON, H. 1909. Some new isopods of the Family Gnathiidae from the Atlantic coast of North America. *Proc. U.S. natn. Mus.* 35: 483-488.
- SCHULTZ, G. A. 1976. Species of asellotes (Isopoda: Paraselloidea) from Anvers Island, Antarctica. In: Biology of the Antarctic Seas VI. *Antarctic Res. Ser. Wash.* 26: 1-35.
- SHEPPARD, E. M. 1957. Isopoda Crustacea Part II. The suborder Valvifera. Families: Idoteidae, Pseudidotheidae and Xenarcturidae Fam. N. *Discovery Reps* 29: 141-198.
- SMITH, S. I. 1876. Crustaceans. In: KIDDER, J. H. Contributions to the Natural History of Kerguelen Island, made in connection with the U.S. Transit of Venus Expedition 1874-1875. *Bull. U.S. nat. Mus.* 3: 57-64.
- STEPHENSON, K. 1947. Tanaidacea, Isopoda, Amphipoda, and Pycnogonida. *Scient. Results Norw. Antarct. Exped. 1927-1928* 27: 1-90.
- STUDER, T. 1879. Beitrage zur Kenntnis niederer Thiere von Kerguelensland. Die Arten der Gattung *Serolis* von Kerguelensland. *Arch. Naturgesch.* 45: 19-34.
- STUDER, T. 1882. Über eine neue art *Arcturus* und eine neue Gattung der Idotheiden. *Sber. Ges. naturf. Freunde Berl.* 1882: 56-58.
- STUDER, T. 1884. Isopoden gesammelt während der Reise S.M.S. *Gazelle* um die Erde 1874-1876. *Abh. preuss. Akad. Wiss.* 1883: 1-28.
- STUDER, T. 1889. *Die Forschungsreise S.M.S. Gazelle, 1874-bis 1876. Zoologie und Geologie* 3. Berlin: E. S. Mittler u. Sohn.
- TATTERSALL, W. M. 1921. Crustacea. Part 6. Tanaidacea and Isopoda. *Br. Antarct. Terra Nova Exped 1910 (zool.)* 3: 191-258.
- VANHÖFFEN, E. 1914. Die Isopoden der Deutschen Sudpolar-Expedition 1901-1903. *Dt. Südpol.-Exped.* 14: 447-598.
- WOLFF, T. 1962. The systematics and biology of bathyal and abyssal Isopoda Asellota. *Galathea Rep.* 6: 1-320.

## ABBREVIATIONS

BM	British Museum (Natural History)
C	cephalon
CC	shrimp trap
CL	king crab trap
CP	beam trawl
DC	Charcot dredge
juv.	juvenile(s)
ovig.	ovigerous
PM	Paris Museum
RK	Reineck corer
SAM	South African Museum
TL	total length
USNM	United States National Museum